

SCHOFIELD BARRACKS MILITARY RESERVATION,
ORDNANCE STOREHOUSE BUILDING 2104
South of intersection of Kolekole Avenue and Cadet Sheridan Road
Wahiawa Vicinity
Honolulu County
Hawaii

HABS No. HI-544-C

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN BUILDINGS SURVEY
U.S. Department of the Interior
National Park Service
Oakland, California

HISTORIC AMERICAN BUILDINGS SURVEY

SCHOFIELD BARRACKS MILITARY RESERVATION, ORDNANCE STOREHOUSE BUILDING 2104

HABS No. HI-544-C

Location: Wahiawa vicinity
City and County of Honolulu, Hawaii

South of intersection of Kolekole Avenue and Cadet Sheridan Road.

USGS 7.5 minute series topographic map, Schofield Barracks, HI, 1998.
Universal Transverse Mercator (UTM) coordinates 04.597250.2376370

Present Owner: United States Army

Present Occupant: United States Army

Present Use: Residential Communities Initiative (RCI) construction office
for ACTUS Lend Lease Co.

Significance: Building 2104 is significant under National Register Criterion A for its association with the early development of Schofield Barracks in the post-World War I era. Directly following World War I, the United States Army had large amounts of surplus ordnance in Army stocks that were leftover from the war. This building is part of a group of nine that were built ca. 1922 to serve as an ordnance storehouse area for the post, containing ammunition for the field guns and howitzers used by the artillery units at Schofield. Building 2104 is also significant under Criterion C as an example of an early ordnance storage facility: the above ground ordnance storehouse. This design was used across the United States for the storage of ordnance until the well-known 1926 Lake Denmark Naval Ammunition Depot explosion. This catastrophic event spurred the development of new safety guidelines and design parameters, and rendered the above ground ordnance storehouse design obsolete. (Since then, the preferred design is an earth covered igloo which is more resistant to accidental detonation.)

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Date: April 2010

PART I. DESCRIPTION

Building 2104 is a single story storehouse building with a rectangular footprint measuring 96'-9" x 52'-4". In addition to the footprint area covered by the building are 6'-10" wide concrete loading platforms along the entire length of each long side. The building is constructed of hollow terra cotta tile within a concrete frame. It is covered with a cement plaster coating and a painted finish. It has a metal truss-supported gable roof covered in corrugated metal with wide overhanging eaves. The building rests on a board-formed concrete wall foundation and it has a 6" thick concrete floor slab. Along the short ends of the building, the top of the foundation forms a water table about 4" wide.

The building's foundation elevates the floor slab and loading platforms above grade. The loading platform at the northwest side of the building is elevated about 2'-0" and was served by a railroad spur. The southwest end of the railroad loading platform has an added wooden handicapped ramp about 30' long that extends down to the paving of the parking area. The loading platform on the opposite (southeast) side of Building 2102 was designed to serve trucks and is elevated about 3'-2" above grade. Both loading platforms are supported at their outer edges by 1'-4" square concrete posts that are at 8'-0" spacing, on center. Each end of the truck (southeast) loading platform has cast concrete stairs up from grade.

The long sides of the building are divided into six bays by plain pilasters (with no bases or capitals) that are typically spaced at 15'-6" on center. The pilasters at the corners of the building are each 3'-0" wide and the remaining five pilasters along each wall are 2'-0" wide. All pilasters project about 4" from the wall. The first, third, fourth, and sixth bays (for this report all bays are numbered left to right, facing the indicated side of the building) along the long sides each have a single window opening that is 5'-3" wide x 5'-7" high with a sill 8'-0" above the floor. The opening is filled with a twelve-light steel sash window with a six-light hopper section. The short ends of the building (gable ends) are divided into three bays by pilasters. The center bay has a single window opening also measuring 5'-3" wide x 5'-7" high that is filled with a twelve-light steel sash window with a six-light hopper section. The sills of these windows are about 11' above the water table. All original twelve-light windows in the building have wire glass lights.

Bays two and five on the southeast long side have original doorway openings filled with added double storefront doors. The northwest side has its original doorway opening at bay two sealed with a surface that matches the exterior walls. The doorway opening at bay five is partially filled and has a single storefront door. Above this doorway is an added shed roof canopy supported by four metal pipe poles.

The roof of Building 2104 is covered with corrugated metal panels on purlins of channel-shape metal beams about 3" high and spaced 2'-4" apart. The eaves have a wide overhang of 4' on all sides of the building. The roof is supported on transverse metal trusses typically spaced 15'-6". Near the midpoint between each truss, the purlins are tied together with short sections of threaded metal rod. At the ridge are two round metal vents.

The area around the storehouse is fairly level and open with scattered large trees that provide shade. A paved parking area lies to the northwest of the building, and a wide mowed lawn on the northeast separates Building 2104 from the adjacent military housing development.

The interior of the building has been modified from its original open space, and includes multiple rooms and offices. The interior typically has vinyl floor tiles, gypsum board walls, and acoustic tile ceilings. A second floor has been added along the southeast length of the building,

accessed by a spiral staircase near the south end. Because the second floor only takes up slightly more than half the width of the building, the offices of the second floor overlook the open space below. A metal pipe railing is installed along the open side of these offices.

PART II. HISTORICAL CONTEXT

For further historical information on this group of ordnance storehouses see the overview report for Schofield Barracks Ordnance Storehouses, HABS HI-544. For more information and photos on individual ordnance storehouses in this group, see each building's dedicated HABS report:

Building 2101	HABS HI-544-A
Building 2102	HABS HI-544-B
Building 2104	HABS HI-544-C
Building 2105	HABS HI-544-D
Building 2106	HABS HI-544-E
Building 2107	HABS HI-544-F
Building 2108	HABS HI-544-G
Building 2109	HABS HI-544-H

Ordnance Storehouses at Schofield Barracks

Building 2104 was built ca. 1922 as one of nine ordnance storehouses at Schofield Barracks.¹ These buildings, which would come to be numbered Building 2101 through Building 2109 were constructed from standardized plans for ordnance storage buildings that were issued by the Quartermaster General prior to 1926.² Sometime between 1955 and 1971, one of the storehouses in this grouping, Building 2103, was removed or demolished.

Another term for an ordnance storehouse of this type is a magazine. The ordnance storehouses originally contained "ammunition for the field guns and the howitzers"³ used by the artillery units at Schofield. In the early 1920s this would have been 75mm and 155mm ammunition for the artillery guns at Schofield Barracks.⁴ The group of storehouses was known as the "ammunition dump" at the time of construction and was exclusively "for the storage of explosives."⁵

Alteration History of Building 2104 and its Various Uses

There was no information located on early alterations to this building. In 1955 Building 2104 was converted into a 50 foot, .22 cal. pistol and rifle range with 10 firing lanes. A backstop and bullet trap of angled steel plates and a sand pit was added at the northeast end and an office and supply room and a latrine were added at the southwest end. Vertically oriented 1x6 tongue and groove boards on horizontal 2x4 studs were added behind the backstop at the northeast end wall. This wall covering wrapped along the long side walls about 18'.⁶

¹ Fourth Construction District, "Schofield Barracks, H.T." map, Honolulu: Fourth Construction District, Nov. 1921.

² U.S. Army Corps of Engineers Seattle District, Context Study of the United States Quartermaster General Standardized Plans, 1866-1942, Aberdeen Proving Ground, MD, 1997, 178-181.

³ U.S. Congress, *War Department Appropriations Bill, 1923, Hearings before the Subcommittee of the Committee on Appropriations U.S. Senate, Sixty-Seventh Congress Second Session on H.R. 10871*, Washington D.C.: U.S. Government Printing Office, 1922, 587.

⁴ McCollister, Capt. John J. "Motorized Artillery in the Field," *Field Artillery Journal*, Washington D.C: United States Field Artillery Association, May/June 1923, 219.

⁵ National Archives and Records Admin. (NARA), photograph HHD 372 in box RG-165-HDD, March 27, 1922.

⁶ Schofield Barracks, Office of the Post Engineer, drawings 5500 4001-4003, dated January 26, 1955.

In 1966 the building was painted, and in 1968 the building was re-roofed with 22 ga. galvanized corrugated metal, which replaced the original corrugated transite (cement-asbestos) roofing. The existing round roof ventilators were reinstalled on the new roof.⁷ By 1981 Building 2104 was assigned for youth activities. In 1988 it was reassigned to the DPCA Golf Association. In 1999 the building was assigned to TSB as a "Kama'aina fix-it" building. It was then renovated to be used as the Actus Lend Lease Co. Army RCI Construction Office. This work was sponsored by 2-11 Field Artillery "On Time, On Target" project.⁸

PART III. SOURCES OF INFORMATION

A. Architectural Drawings:

Historic drawings dating from 1955 to 1971 produced by the office of the Schofield Barracks Post Engineer for the ordnance storehouses are filed as scanned documents at Schofield Barracks, Directorate of Public Works Archival Database, under the purview of the Environmental Section of the Schofield Department of Public Works.

Drawings numbered:

55004001, 55004402, 55004403 (3 drawings)
57017001, 57017002, 57017003, 57017004 (4 drawings)
57027001, 57027002, 57027003 (3 drawings)
57044001, 57044002, 57044003 (3 drawings)
66034004 (1 drawing)
67019002 (1 drawing)
68040001 (1 drawing)
68062001 (1 drawing)
69062001, 69062002 (2 drawings)
71018001 (1 drawing)

B. Early Views:

Early photos of the ordnance storehouses and Schofield Barracks are available at the National Archives in RG-165-HDD. Schofield Barracks historic photos (including photos of the artillery weapons deployed there) are available at Hawaii State Archives (HSA) file PP54 folders 5 through 11, file PP55 folder 6, and in photo albums 56 and 96. These HSA photos are considered in the public domain.

C. Bibliography:

Alvarez, Patricia M. *A History of Schofield Barracks Military Reservation*. Fort Shafter, HI: U.S Army Engineer Division Pacific Ocean. March 1982.

DeBaker, Cassidy, Carole Denardo, and Windy McElroy. *Historic Architecture Building Survey and Phase I Cultural Resource Survey for Military Housing and Privatization Actions at Schofield Barracks, Island of Oahu, Hawaii*. Honolulu: Tetra Tech Inc. 2007.

⁷ Ibid., drawing 6804 001, dated May 6, 1968.

⁸ Cassidy DeBaker, Carole Denardo, and Windy McElroy, *Historic Architecture Building Survey and Phase I Cultural Resource Survey for Military Housing and Privatization Actions at Schofield Barracks, Island of Oahu, Hawaii*, Honolulu: Tetra Tech Inc., 2007, 35-36.

Fourth Construction District. "Schofield Barracks, H.T." map. Honolulu: Fourth Construction District, Nov. 1921. In archives collection of Mason Architects, Inc., Honolulu.

Murphy Joseph, Dwight Packer, Cynthia Savage, Duane E. Peter, and Marsha Prior. *Army Ammunition and Explosives Storage in the United States, 1775-1945*. Fort Worth, TX: U.S. Army Corps of Engineers. 2000.

McCollister, Capt. John J. "Motorized Artillery in the Field," *Field Artillery Journal*. Washington D.C: United States Field Artillery Association. May/June 1923.

National Archives and Records Administration (NARA). Photograph HHD 372 in box RG-165-HDD. March 27, 1922.

Schofield Barracks, Office of the Post Engineer. Historic drawings of ordnance storehouses in Schofield Barracks Directorate of Public Works Archival Database. Various dates.

U.S. Army Corps of Engineers Seattle District. *Context Study of the United States Quartermaster General Standardized Plans, 1866-1942*. Aberdeen Proving Ground, MD. 1997.

U.S. Congress. *War Department Appropriations Bill, 1923, Hearings before the Subcommittee of the Committee on Appropriations U.S. Senate, Sixty-Seventh Congress Second Session on H.R. 10871*. Washington D.C.: U.S. Government Printing Office. 1922.

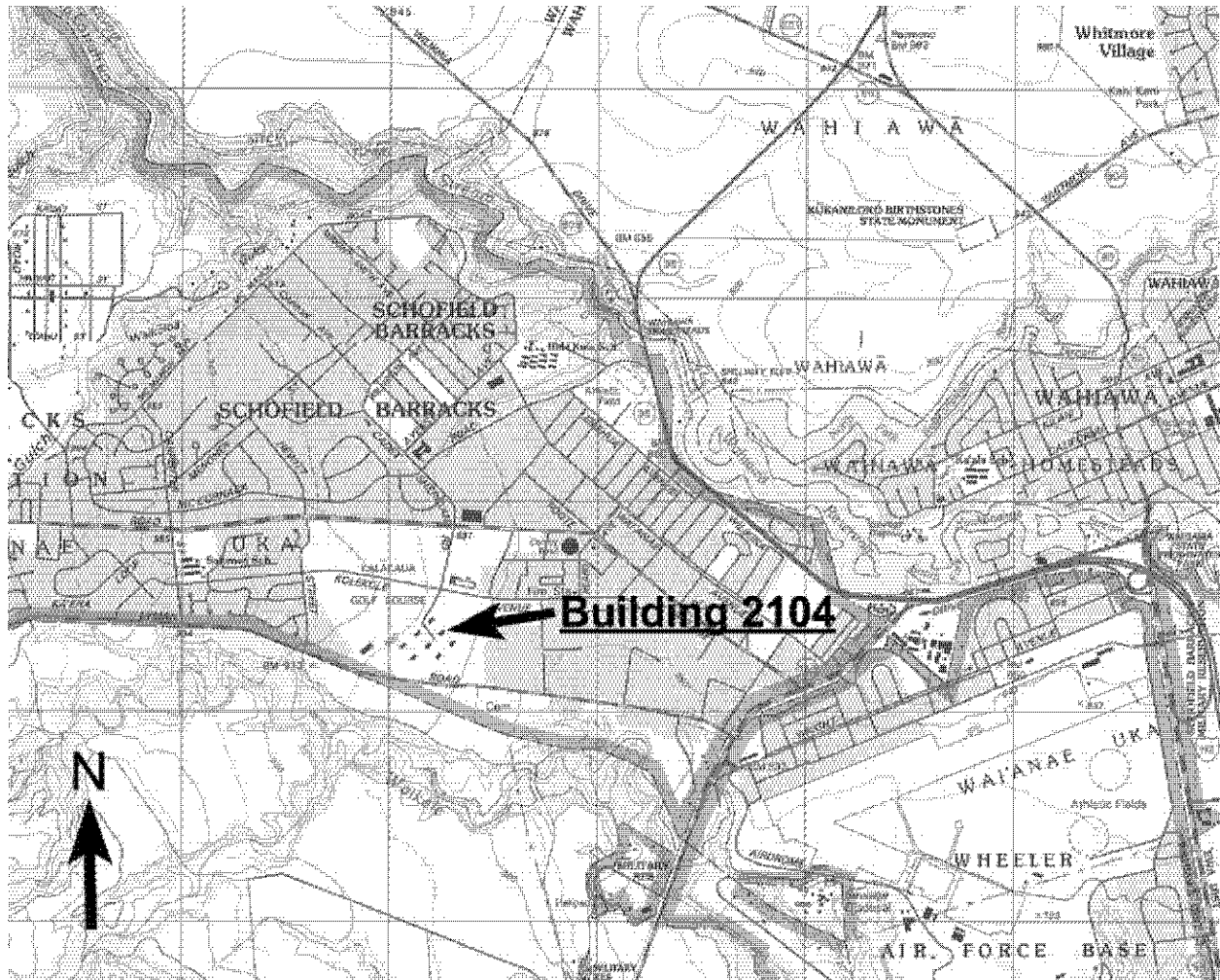
PART IV. PROJECT INFORMATION

This report was produced to provide mitigation for the possible demolition of Buildings 2101, 2102, 2104-2109 at Schofield Barracks Military Reservation. These buildings may be brought into the Army's Residential Communities Initiative (RCI) program which transfers structures and leases land to private development partners in order to improve the Army's family housing inventory.

This report is intended to satisfy requirements under Section 110 of the National Historic Preservation Act of 1966 (NHPA) as amended, to make appropriate records of historic properties that would be substantially altered or demolished as a result of Army action. Mitigation for demolition of extensive alteration under Section 106 sometimes requires HABS reports according to National Park Service (NPS) guidance. Section 101(a) of the NHPA requires that these records be deposited in the Library of Congress for future use and reference. The RCI program could result in demolition of Buildings 2101, 2102, 2104-2109 at Schofield Barracks Military Reservation.

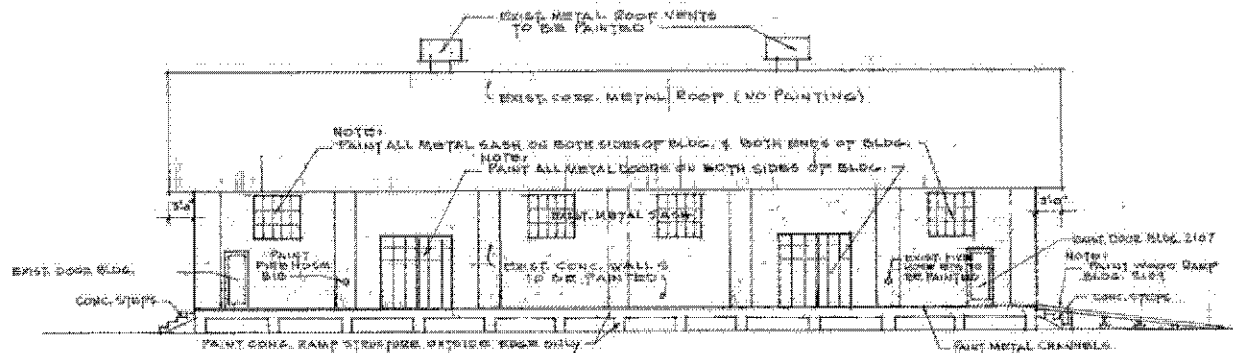
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Location map. North at top.

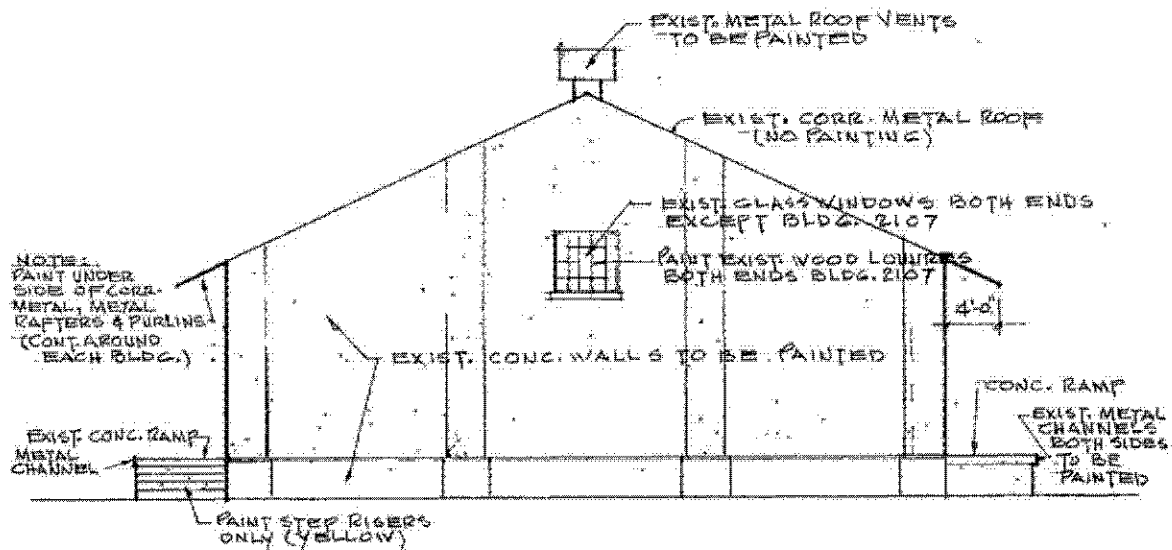


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Portion of drawing dated May 6, 1966 showing typical exterior elevations of the Ordnance Storehouse buildings. This drawing was prepared for the exterior painting of Buildings 2101, 2102, 2104-2109. Schofield Barracks, Office of the Post Engineer, drawing 66034004. No scale.



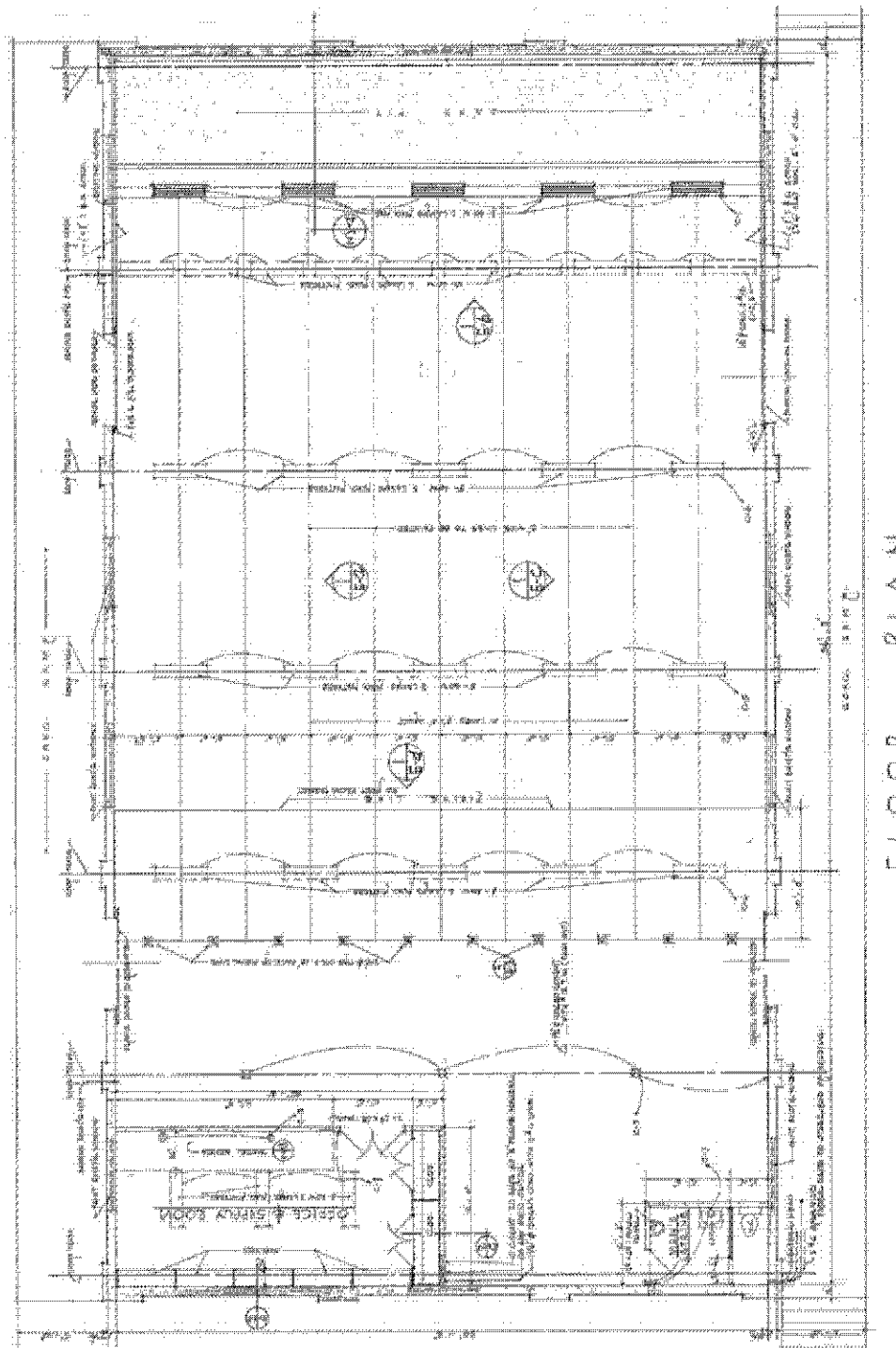
SIDE ELEVATION (CONC. STEP SIDE)



END ELEVATIONS

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Portion of drawing dated January 26, 1955 showing the floor plan of the Ordnance Storehouse buildings. Note the footprint dimensions and location of original window and door openings. This drawing was prepared to convert Building 2104 into a .22 cal. pistol & rifle range. Schofield Barracks, Office of the Post Engineer, drawing 55004001. No scale.



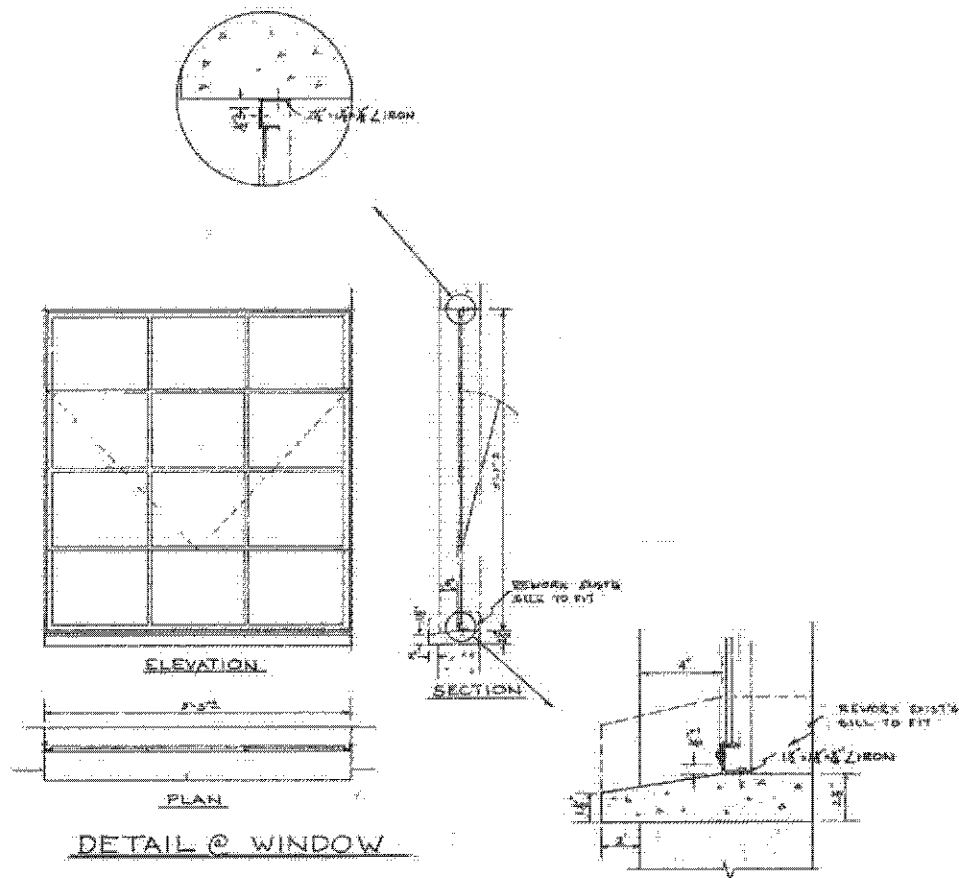
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Portion of drawing dated January 26, 1955 showing typical interior configurations of the Ordnance Storehouse buildings. Note the position and configuration of roof trusses. This drawing was prepared to convert Building 2104 into a .22 cal. pistol & rifle range. Schofield Barracks, Office of the Post Engineer, drawing 55004002. No scale.



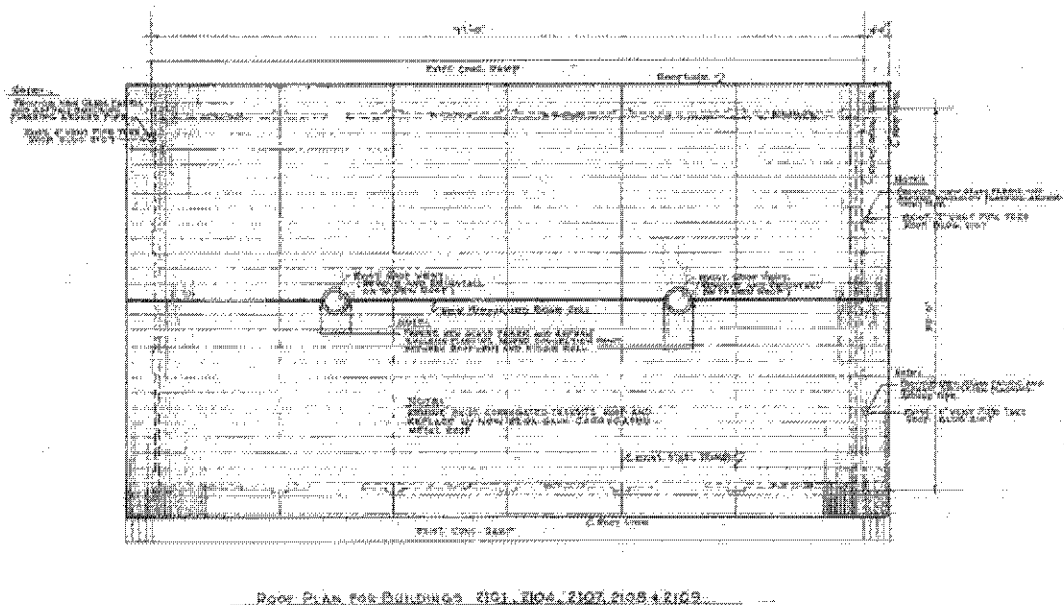
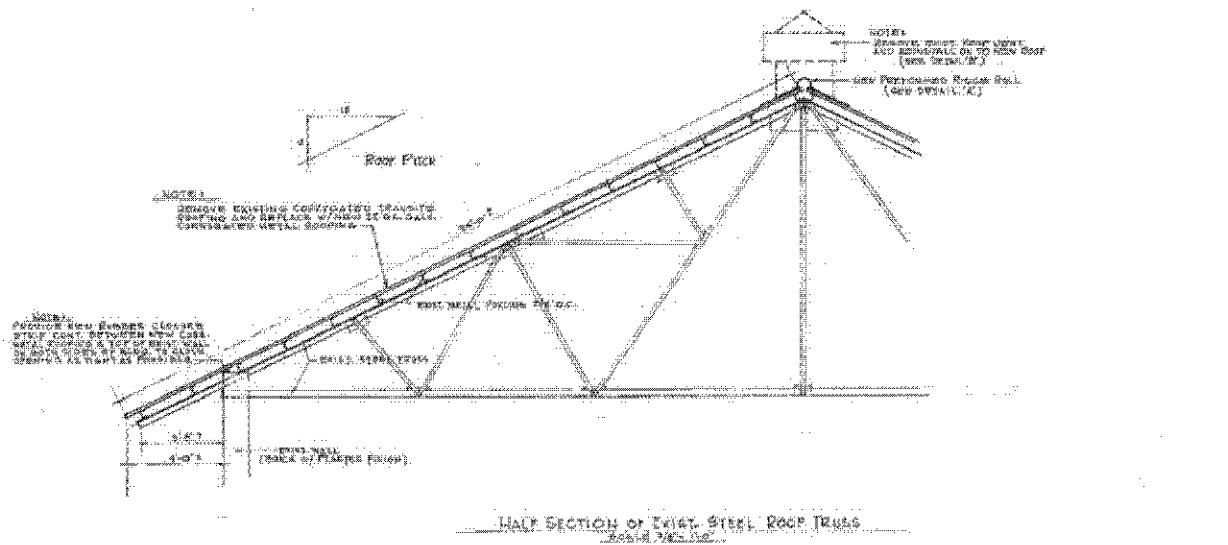
SCHOFIELD BARRACKS MILITARY RESERVATION,
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Portion of drawing dated April 10, 1967 showing typical original window construction of the Ordnance Storehouse buildings. This drawing was prepared for various repairs and alterations at Buildings 2101, 2102, 2104-2109. Schofield Barracks, Office of the Post Engineer, drawing 67019002. No scale.



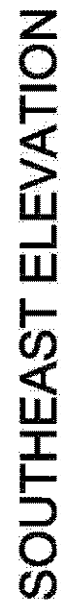
SCHOFIELD BARRACKS MILITARY RESERVATION,
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Portion of drawing dated May 6, 1968 showing roof details of the Ordnance Storehouse buildings. Note the roof truss configuration. This drawing was prepared for the re-roofing of Buildings 2101, 2104, 2107, 2108, and 2109. Schofield Barracks, Office of the Post Engineer, drawing 68040001. No scale.

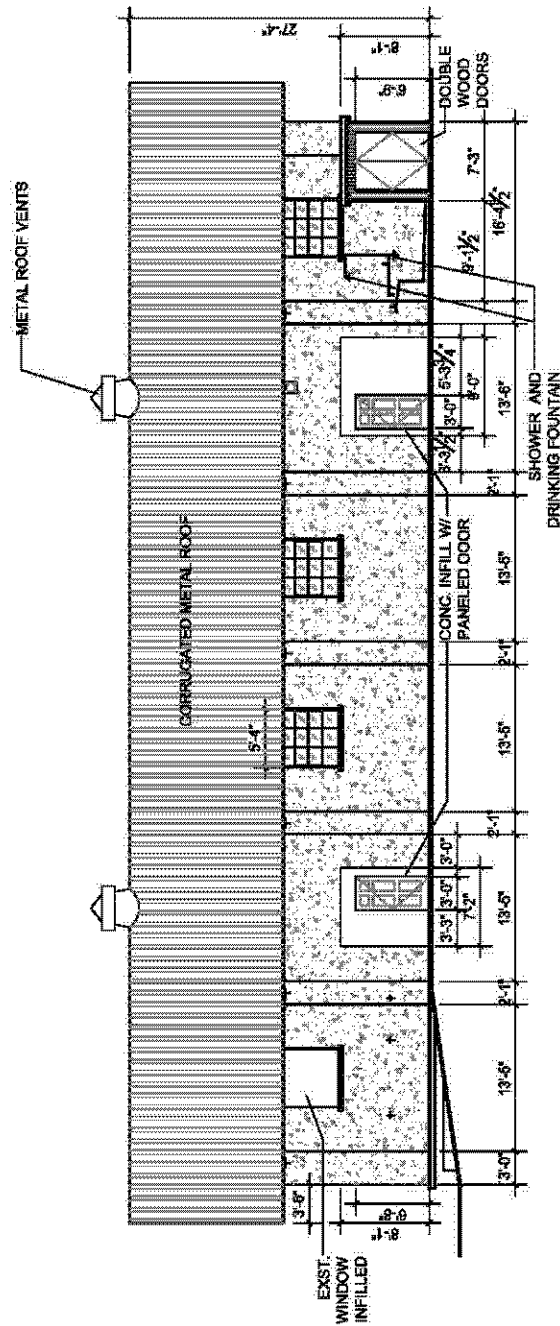


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These drawings were prepared by Mason Architects. Not to scale.

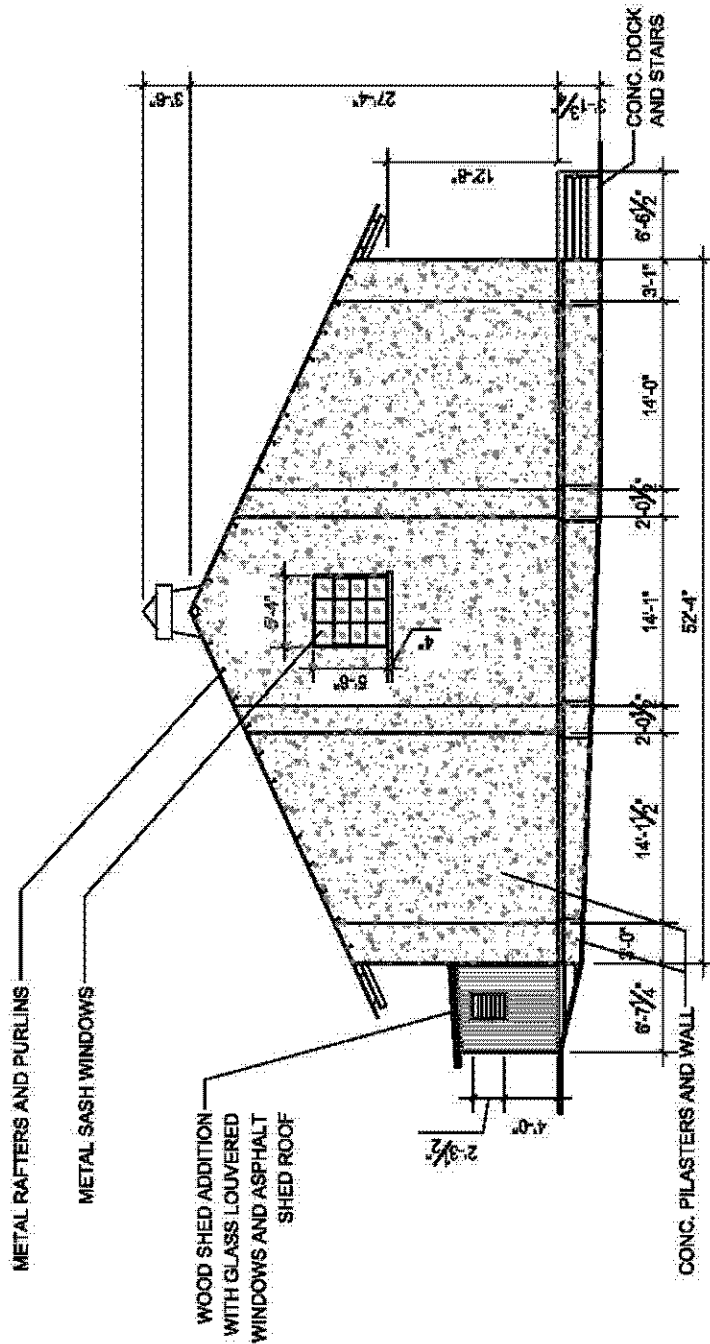


Drawing of ordnance storehouse building dated June 28, 2010 showing the exterior northwest elevation, typical of ordnance storehouse buildings. Note that some of the original large door openings are now in-filled but the location of original window and door openings are evident. These drawings were prepared by Mason Architects. Not to scale.



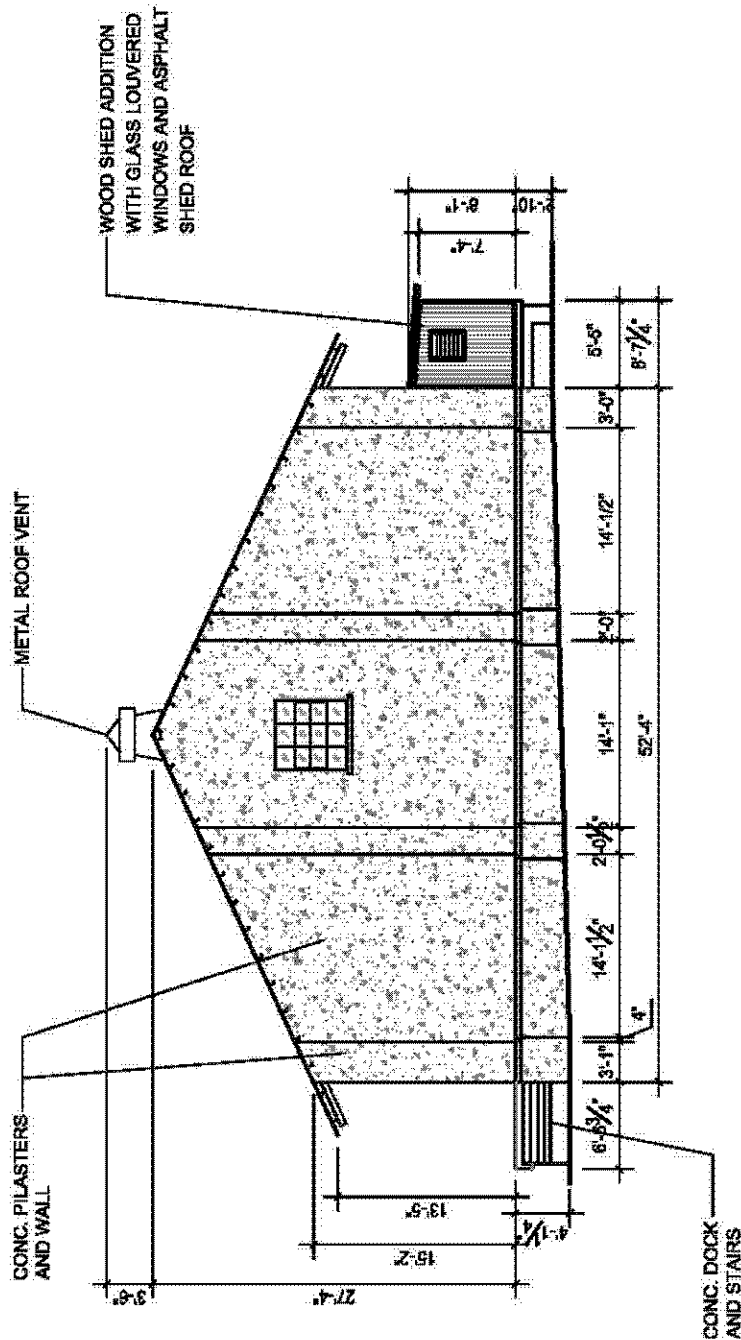
NORTHWEST ELEVATION

Drawing of ordnance storehouse building dated June 28, 2010 showing the exterior southwest elevation, typical of ordnance storehouse buildings. Note that some of the original large door openings are now in-filled but the location of original window and door openings are evident. These drawings were prepared by Mason Architects. Not to scale.



SOUTHWEST ELEVATION

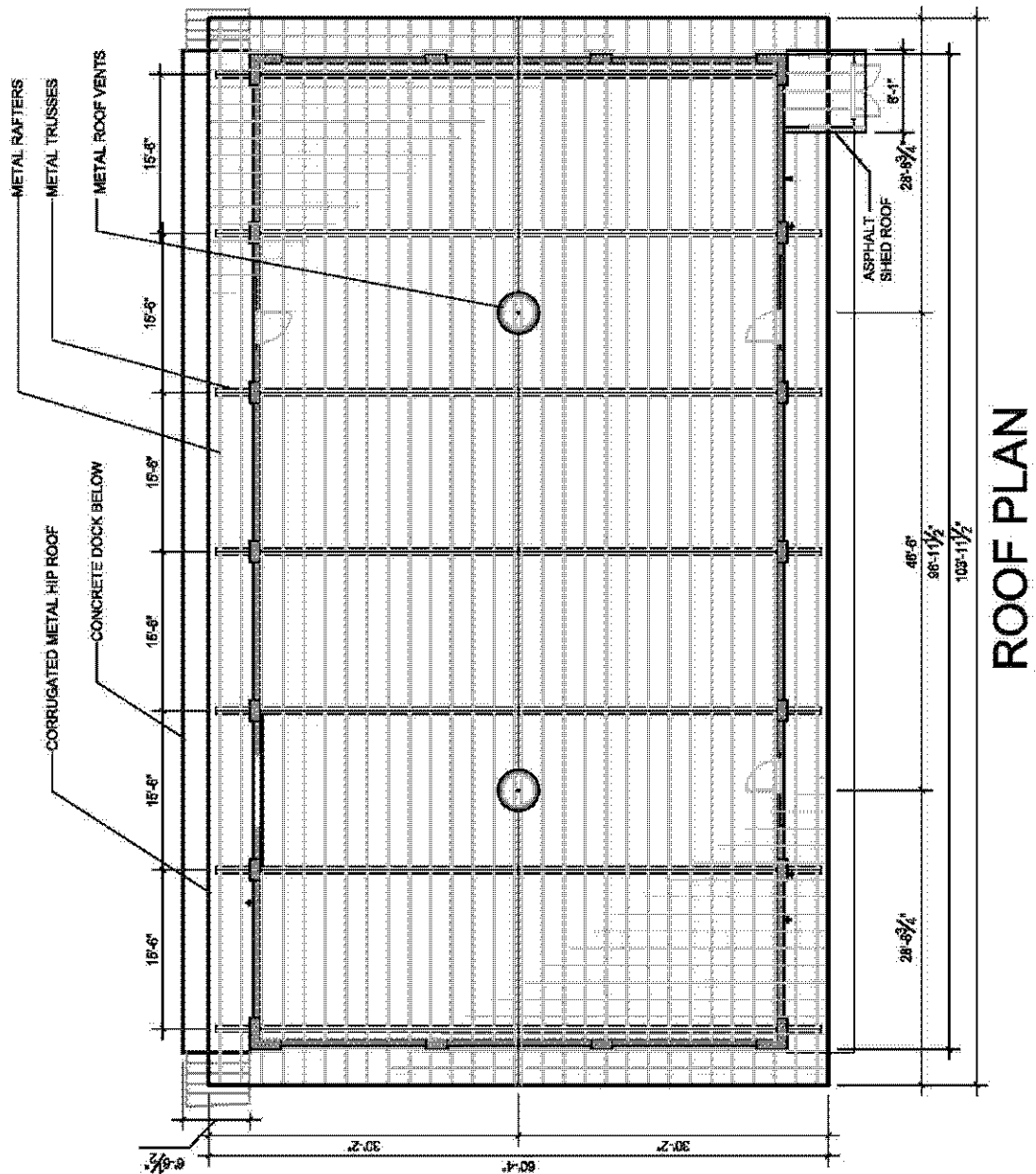
Drawing of ordnance storehouse building dated June 28, 2010 showing the exterior northeast elevation, typical of ordnance storehouse buildings. Note that some of the original large door openings are now in-filled but the location of original window and door openings are evident. These drawings were prepared by Mason Architects. Not to scale.



NORTHEAST ELEVATION

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Drawing of ordnance storehouse building dated June 28, 2010 showing the exterior roof plan, typical of ordnance storehouse buildings. Note that some of the original large door openings are now in-filled but the location of original window and door openings are evident. These drawings were prepared by Mason Architects. Not to scale.



ROOF PLAN